QUESTION:Apply advanced statistical techniques to a dataset,presenting findings and insights.

```
#Importing Numpy library
import numpy as np


#Creating a dataframe called Stt
Stt=np.array([2,4,6,8,10,12,14,])


#Displaying the dataframe
Stt
```

```
array([ 2,  4,  6,  8, 10, 12, 14])
```

```
#Checking the shape of the array
Stt.shape
```

```
(7,)
```

```
#The type of elements in the array
Stt.dtype
```

```
dtype('int64')
```

```
#Total number of elements
Stt.size
```

```
7
```

Statistical techniques

```
#Descriptive statistics such mean and median


#Checking the mean
mean=np.mean(Stt)
mean
```

```
8.0
```

```
#The median
median=np.median(Stt)
median
```

```
8.0
```

```
#The standard deviation
std_dev=np.std(Stt)
```

```
std_dev
```

```
      4.0
```

```
#The variance
Variance=np.var(Stt)
Variance
```

```
      16.0
```

```
#Inferential statistics such as Student's t-test
```

Example:Six students were chosen at random from a class and given a math test.The teacher wants the class to be able to score 70 on the test. The six students get scores 62,92,75,68,83 and 95.Can the teacher be 95% confident that the mean score for the class would be 70?

```
#Performing a t-test
from scipy import stats as st
```

```
scores=[62,92,75,68,83,95]
```

```
st.ttest_1samp(scores,70)
```

```
      TtestResult(statistic=1.7053136360191492, pvalue=0.14885362711300268, df=5)
```

```
Since we get pvalue =0.14 which is large,that means we will refuse to reject the null hyp
othesis.
```

Since we get pvalue =0.14 which is large,that means we will refuse to reject the null hypothesis.